

pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

18. (Once Amended) A heat exchanger according to claim 5, further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

19. (Once Amended) A heat exchanger according to claim 6, further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

20. (Once Amended) A heat exchanger according to claim 7, wherein said sensor is connected to a security system.

IN THE ABSTRACT

The abstract submitted in the preliminary amendment is now submitted on a separate sheet. Entry of the new abstract is therefore respectfully requested.

REMARKS

Favorable reconsideration of this application, in view of the following comments and as presently amended, is respectfully requested.

In the outstanding Office Action, the drawings were objected to as failing to comply with 37 C.F.R. 1.83(a), for not showing some claimed features, that is the pipes, a security system, and the sensors. Accordingly, the drawings have been amended to include those features. Hence, withdrawal of the 37 C.F.R. 1.83(a) objection is respectfully requested.

Applicant has amended all the minor informalities in the specification and the claims, and no new matter has been entered by this amendment. The claims have also been amended

to use more standard language under U.S. practice.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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IN THE SPECIFICATION

Replace Page 3, lines 23-34 with the following:

- The present inventor has [realised] ~~realized~~ that the problem can be solved by means of an arrangement described hereinafter. Around each connection there is a separation zone created by a separation groove. The separation groove is preferably designed approximately like a quarter circle segment. Into the separation zone only that medium is allowed entry which flows in or out through the connection. Within the separation zone there is a blocked-off space, which cannot be reached by any one of the media. This space is provided with a leakage vent. The leakage vent is arranged in such a way that the medium flowing through the connection flows around the hole via the grooves. Thus, this medium does not ["see"] "see" the hole. Nor can the other medium, flowing in the surrounding channels, reach the hole, due to the separation groove. The leakage vent can only be reached by medium if the brazing around the connection, or at the separation groove, breaks.

Replace Page 5, lines 3-12 with the following:

--It will be understood that the invention depicted in the drawings and the description may be varied in several ways. The number of leakage holes 2, 7 may be higher than one in each separation zone. It is to be understood that the holes must be located in rotational symmetry, as every other plate is turned 180°. In the drawing, the holes are shown located at

n angle of 45°, [centred] ~~centered~~ between the edges of the plates, but it is possible to locate the holes close to an edge. Arranging the holes closer to the edge may in certain cases make them more easily accessible. A person skilled in the art will furthermore understand that different types of sensors and their connections to the separation zones are possible. All such possibilities are considered to be within the scope of the invention.--

IN THE CLAIMS

Please amend claims 1-20 as follows:

1. (Once Amended) A heat exchanger comprising:

plates having a pattern of grooves, and inlet and outlet connections, placed so as to form a pack and brazed together so as to form separate channels for two media between alternating pairs of plates;[, characterised by]

a separation zone having a blocked-off space formed by a barrier of valleys and peaks in contact with each other in alternate pairs of plates at a distance from the connections, [the] a brazing at the edges of the plates and [the] a brazing at the connections, which blocked-off space cannot be reached by any one of the media except during leakage, in such a way that the medium which is not to reach and flow through the respective connection is blocked at the barrier between one pair of plates, whereas the other medium can flow through the separation zone in adjacent channels in surrounding pairs of plates and [on] through the respective connection; and [by]

a leakage vent extending from the blocked-off space to the exterior.

2. (Once Amended) A heat exchanger according to claim 1, [characterised by]

wherein the blocked-off space [being] is formed by a separation groove, running at a distance from each connection and separating the connection towards the respective corner.

3. (Once Amended) A heat exchanger according to claim 1, [characterised by] wherein the leakage vent [consisting of] includes holes, arranged in rotational symmetry through the plates, such that the holes register when turning every other plate 180°.
4. (Once Amended) A heat exchanger according to claim 3, [characterised by] wherein the holes [being] are located at an angle of 45°, [centred] centered between the edges of the plates.
5. (Once Amended) A heat exchanger according to claim 3, [characterised by] wherein the holes [being] are located close to one edge of the plates.
6. (Once Amended) A heat exchanger according to claim 1, [characterised by] further comprising a sensor for detecting leakage [being] located in one or more blocked-off spaces.
7. (Once Amended) A heat exchanger according to claim 1, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.
8. (Once Amended) A heat exchanger according to claim 7, [characterised by several] further comprising plural pipes [being] connected to a common sensor.
9. (Once Amended) A heat exchanger according to claim 6, [characterised by] wherein said [sensor(s) being] sensor is connected to a security system.
10. (Once Amended) A heat exchanger according to claim 2, [characterised by] wherein the leakage vent [consisting of] includes holes, arranged in rotational symmetry, through the plates, such that the holes register when turning every other plate 180°.
11. (Once Amended) A heat exchanger according to claim 2, [characterised by] further comprising a sensor for detecting leakage being located in one or more blocked-off spaces.
12. (Once Amended) A heat exchanger according to claim 3, [characterised by]

further comprising a sensor for detecting leakage being located in one or more blocked-off spaces.

13. (Once Amended) A heat exchanger according to claim 4, [characterised by] further comprising a sensor for detecting leakage being located in one or more blocked-off spaces.

14. (Once Amended) A heat exchanger according to claim 5, [characterised by] further comprising a sensor for detecting leakage being located in one or more blocked-off spaces.

15. (Once Amended) A heat exchanger according to claim 2, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

16. (Once Amended) A heat exchanger according to claim 3, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

17. (Once Amended) A heat exchanger according to claim 4, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

18. (Once Amended) A heat exchanger according to claim 5, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

19. (Once Amended) A heat exchanger according to claim 6, [characterised by] further comprising a pipe running from one or more closed-off spaces, said pipe being connected to a sensor for detecting leakage.

20. (Once Amended) A heat exchanger according to claim 7, [characterised by]

wherein said sensor [being] is connected to a security system.

ABSTRACT OF THE DISCLOSURE

A heat exchanger with a leakage vent. A fully brazed heat exchanger has an arrangement preventing the two media inside the heat exchanger from mixing in case of leakage. The heat exchanger includes plates having a pattern of grooves and inlet and outlet connections. The plates are placed in a pack and brazed together so as to form separate channels for two media between alternating pairs of plates. A separation zone is created around the connection so as to block off the medium that is not to reach the respective connection. The other medium can flow on by. A leakage vent to the exterior is provided in the separation zone so as to allow detection of any leakage.